

Did *the* Influenza Plague Really Come from China?

How Science Has Found a Startling Likeness Between the Germs of the Appalling Disease as It Appears in European and American Cities, and As It Has Thrived in Mongolian Slums



Beggar Class Type of Manchurians Who Live in a Condition of Frightful Uncleanliness and Facilitate the Spread of Every Epidemic.

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A COMPARISON of the epidemic of the disease known as "Spanish influenza," with the epidemic of pneumonic plague that broke out in Harbin, China, in October, 1910, and spread continuously throughout northern China at the time, reveals so many points of similarity as to suggest that the disease which became epidemic this fall may be the same malady, but modified by racial and topographical differences, that ravaged northern China eight years ago. The origin of the influenza plague was suggested to the writer soon after its outbreak in our camps, by Mr. Guy M. Walker, an eminent American authority on Chinese affairs. This suggestion led to an investigation of the reports of the pneumonic plague in China and there is sufficient likeness of that disease to the so-called Spanish influenza as to warrant a consideration of it.

Pneumonia in Harbin.

The pneumonic plague first appeared in Harbin, a town in Manchuria under Chinese control. Harbin is on the Trans-Siberian Railroad and was the original hotbed of the disease. The plague had prevailed in Russia previous to November, 1910, but the Russians, alert to its danger, took immediate action and stamped it out. It was believed that the plague was carried into Harbin by the fur dealers, the furs themselves, and by Chinese laborers returning to their homes to celebrate New Year's Day, a custom universally observed in China. From Harbin the plague rapidly spread in all directions, usually following the lines of traffic along the railroads.

It spread as far south as Chifu, a seaport town, probably having been carried there by Chinese coolies returning from the north. By Jan. 24, 1911, 1500 Chinese and 27 Europeans, two of whom were physicians, and an assistant had died of it; in fact, nearly all who had the disease perished of it.

The Spread in China

The plague had been very serious, the mortality being fearfully high. This malady has spread throughout China. Wherever Chinese coolies from the north have travelled they have carried this disease. From 1910 up to 1917 China has not been free from it. The writer heard of several cases being present in Peking last year.

In the early part of 1917 about 200,000 Chinese coolies collected from the northern part of China where the pneumonic plague has raged at intervals since 1910, were sent to France as laborers. Part of them were sent around through the Mediterranean; some, and perhaps the majority, were sent across the Pacific and then through Canada and America to be transported across the Atlantic to France. Entire trainloads of these coolies were carried across the United States to the port of New York and thence to France.

The photograph showing the boatloads of the coolies at Weihaiwei ready for embarkation to France via Pacific, Canada, America and Atlantic, were taken by Mr. L. P. Frieder.

Coolies Carrying the Plague

The coolies made splendid laborers in France and were in back of the lines during the German drive of March, 1918. No doubt many of them were captured by the Germans at that time. Hence the outbreak of the disease in the German army and its rapid spread to Spain.

So far as medical science knows today this disease first broke out last spring in the German army where it was said to have been very serious. Next it was heard of in Spain, hence the name

Spanish influenza. The name is really a misnomer, but it has stuck, probably because it was the first epidemic of influenza that Spain ever had. Since our soldiers and sailors have been returning from the battlefields of France it has become very prevalent and serious in our camps and cities all over the country.

After this brief review of the pneumonic plague and the narration of its possible connection with the present epidemic it is of interest to compare the clinical and bacteriological aspects of the malady.

The Symptoms in China

It is not necessary here to go into detail concerning the clinical data except in a very general way. In the Chinese epidemic there were few definite symptoms at the outset of the disease except the general malaise, prostration, loss of appetite, etc., soon to be followed by the pneumonic process and death. So it is in the present epidemic. There have been indefinite symptoms with great prostration rapidly followed by pneumonia and death in the most virulent forms. The outstanding features of the Chinese pneumonic plague were its high infectivity and high mortality. So this so-called influenza epidemic which is more contagious, is followed more frequently by pneumonia and attended with higher mortality than in any previous influenza epidemic.

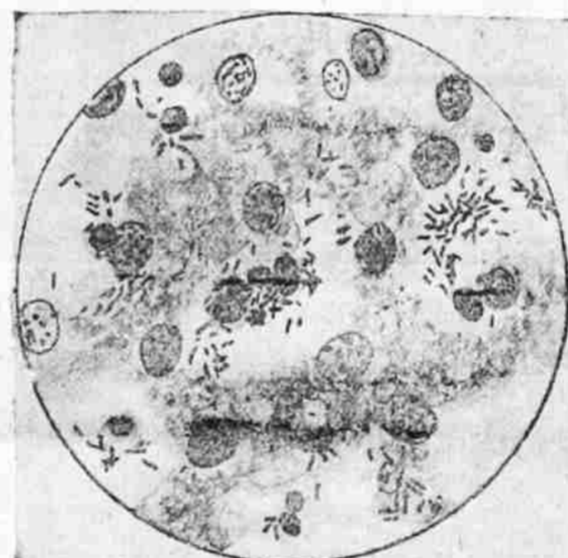
In the pneumonic plague epidemic of China



Section of Lung Showing Plague Bacilli.



The Tarbagan Flea, Greatly Magnified. This Creature Is Credited with Carrying the Germs of Chinese Influenza.



Section of Kidney Showing Presence of Large Number of Bacilli.

the bacillus pestis was almost constantly found associated with the pneumococcus and the streptococcus. These organisms were found in different localities where the plague was prevalent. The virulence of the disease likewise varied. For instance, Dr. Shibayama made a report on eight different strains of pneumonic plague organisms

before the International Plague conference held in Moscow in April, 1911.

The bacteria found in patients in the influenza epidemic have been the influenza bacillus associated with the four groups of pneumococci, the streptococcus hemolyticus and the micrococcus calcaratus. For instance, in one camp the organisms found were the influenza bacillus associated with group 1 pneumococcus; in another it was the influenza bacillus associated with group 2 pneumococcus; in another influenza and streptococcus hemolyticus, etc.

We see, therefore, how different strains of the pneumococcus and streptococcus associated with a bacillus were the exciting causes of the epidemic in different localities. Likewise, the mortality and virulence of the disease has varied in different localities.

Similarity in the Two Plagues

That we have shown a striking similarity between the pneumonic plague of north China and the so-called Spanish influenza epidemic. It is not unreasonable to believe that the two diseases may be the same. The influenza bacillus and the bacillus pestis in atypical forms may simulate each other. We know that organisms may assume different forms and have different cultural characteristics under different conditions.

The ordinary influenza bacillus is a short slender bacillus. The bacillus pestis is about the same



The Tarbagan, or Marmot, of the Squirrel Family, Used as Food in China, and Regarded as Responsible for Many Cases of Plague.

length, but is generally a fatter, broader bacillus. Both are Gram Negative.

It seems possible that the bacillus pestis may have been present in a non-virulent state in the Chinese coolies and assumed new virulence, vigor and a somewhat different form when transplanted into virgin soil. The high mortality and infectivity of this epidemic strongly suggest it.

On this basis the epidemics which have followed all great wars may be explained. If a nation or tribe can survive any disease long enough it will acquire immunity to that disease. When, however, foreign people commingle freely and intimately as in war, epidemic will break out. The inactive, non-virulent organisms in one race will become virulent in some other race which has not acquired immunity to that specific organism.

Vaccine for the Plague

By Dr. Leonard Keene Hirschberg

The successful work of American physicians in applying preventive measures against the plague gives great interest to the following statement by Dr. Leonard Keene Hirschberg:

Once the germ was brought to light, isolated and cultivated by itself, the doctors in several American army camps at once set to work to boil and bottle the dead microbes as a vaccine.

The new vaccine—sometimes absurdly called a serum—has been found to be nearly a complete and positive preventive of Spanish influenza and its complications.

So successful has its use as a preventive inoculation been proved that since the first day it was introduced on a large scale Sept. 28, 1918, when 51,117 new victims were reported, there has been a steady decline in the number of soldiers and civilians affected.

Use of the vaccine will be widely extended since Congress appropriated \$1,000,000 to be used by the public health service in fighting this communicable disease.

The public health service, aided by the medical forces of the army and navy, took steps to render effective aid to all districts in which influenza made its appearance.

The vaccine has been used in several camps but to announcement had been made of its discovery pending the result of widespread tests. Physicians connected with the army medical school developed the vaccine which was manufactured in quantities sufficient to provide for the treatment of 50,000 persons daily. The vaccine is designed primarily for pneumonia, which often follows attacks of influenza and which is the cause of practically all the deaths attributed to influenza.

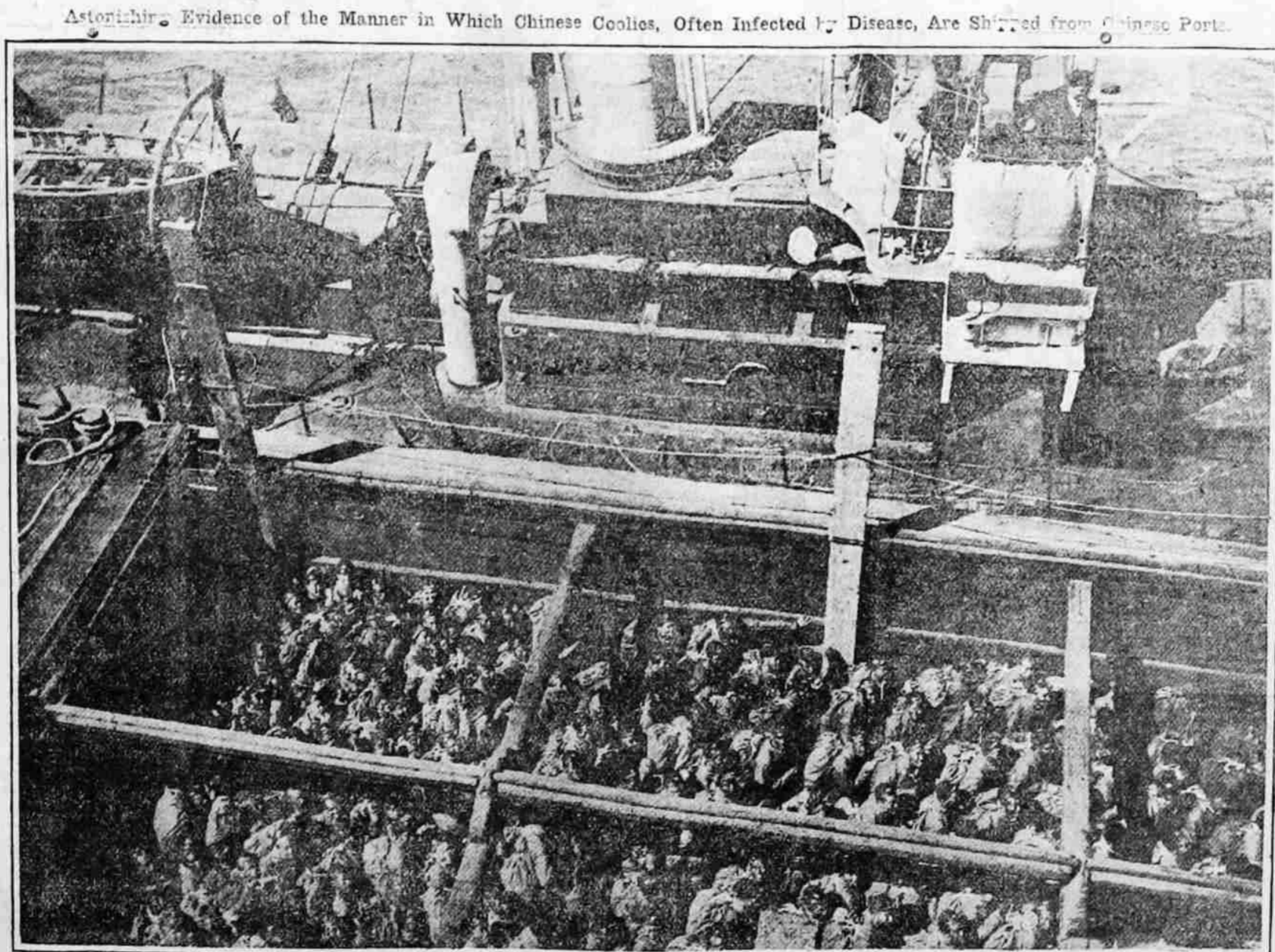
One treatment with the vaccine only is needed, although in the early stages of its development three vaccinations were found necessary.

There are a number of vaccines now employed successfully in army and navy cantonnements. It is a pathetic reflection upon so-called "human intelligence" that it is necessary to have military discipline to prevent people getting typhoid, dysentery, meningitis, influenza and pneumonia.

Lime to Preserve Potatoes

THE French department of agriculture lately issued the following indications as to the best method of preserving potatoes against rotting, such as is likely to occur in damp places. By employing the proper method, it is possible to diminish the dampness within the piles where the air does not enter or only circulates very slowly. To avoid this, a substance which absorbs water and having no action upon the potato must be employed, and for this purpose it is found that lime is the best substance, as it costs least, is easy to handle, and is best known.

In practice the method can be applied in the following way. It is to be remarked that when potatoes are stored up after being well cleaned beforehand, they commence to exude moisture, and must be gone over again. The storage place is sprinkled with quicklime, and each layer of three or four inches of well dried potatoes is sprinkled over with lime; the same on the outside of the pile. When sorting as above stated, the imperfect ones need not be thrown away, but the bad parts cut out and the rest fed to stock after cooking or passing through a dryer or baking in a furnace; or they can be sent to a starch factory if one is near by. As to the amount of lime to be used, the proper quantity is about 10 pounds of lime for 1000 pounds of potatoes.



Astonishing Evidence of the Manner in Which Chinese Coolies, Often Infected by Disease, Are Shipped from Chinese Ports.